

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANGELO UGGE and ROBERT PEZZANI

Appeal No. 1997-0601
Application 08/161,878

ON BRIEF

Before THOMAS, HAIRSTON and LALL, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 to 6 and 12 to 16, claims 7 to 11 having been indicated¹ to contain allowable

¹ The Examiner has withdrawn the rejection of claims 7 to 11 [Answer, page 1].

subject matter.

The disclosed invention relates to an overvoltage protection circuit. The invention is particularly useful for protecting devices attached to a standard telephone line. Overvoltages can occur between the two telephone lines, or between these lines and ground. Various arrangements of semiconductive switches are disclosed, such as the two lateral PNP switches, to provide for the drain to ground in case of an overvoltage situation. Additionally, the invention is an advancement over the art because it integrates all of the components necessary to create a three-way balanced protective circuit into a single monolithic integrated circuit. The invention is further illustrated by the following claim.

Claim 1 is reproduced below as representative of the invention.

1. An overvoltage protection circuit, comprising:

first and second regions, formed within a substrate having a first conductivity type, said first and second regions having a second conductivity type and having the same area;

third and fourth regions, having the first conductivity type, formed within said first and second regions,

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respectively, wherein said third and fourth regions are not continuous, having sub-areas contained within them through which portions of said first and second regions, respectively, are exposed,;

a fifth region, formed within the substrate, having the second conductivity type and having an area approximately twice that of said first region;

a sixth region, having the first conductivity type, formed within said fifth region, wherein said sixth region is also not continuous, also having sub-areas contained within it through which portions of said fifth region is [sic, are] exposed, and wherein a hole density of the sub-areas in said sixth region is no more than one-third a respective hole density of the sub-regions within the third and fourth regions; and

first, second and third conductive contacts connected to said first, second, and fifth regions, respectively, said first contact also contacting said third region, said second contact also contacting said fourth region, and said third contact also contacting said sixth region;

wherein bilateral switches are formed between each pair of said conductive contacts.

The Examiner relies on the following references:

Alonas et al. (Alonas)	4,396,932	Aug. 2, 1983
Schovanec	5,220,197	Jun. 15, 1993 (filed Mar. 24, 1992)
Ohta	5,352,905	Oct. 4, 1994 (filed Sep. 17, 1992)

Claims 4, 5 and 15 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 1, 2, 6, 12 and 16 stand rejected

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over Ohta under 35 U.S.C. § 103. Claims 1 to 3, 6, 12 and 16 also stand rejected over Ohta and Alonas under 35 U.S.C. § 103. Finally, claims 12 to 14 stand rejected over Ohta and Schovanec under 35 U.S.C. § 103.

Rather than repeat the arguments of Appellants and the Examiner, we make reference to the briefs² and the answer for the respective details thereof.

OPINION

We have considered the rejections advanced by the Examiner and the supporting arguments. We have, likewise, reviewed the Appellants' arguments set forth in the briefs.

We affirm.

Regarding the requirement for enablement, the test is whether one skilled in the art could make and use the claimed invention from the disclosure coupled with information known

² A reply brief was filed as paper no. 12 and its entry was approved by the Examiner [paper no. 13] without any further response by the Examiner.

in the art without undue experimentation. See United States v. Teletronics, Inc., 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988), cert. denied, 109 S.Ct. 1954 (1989); In re Stephens, 529 F.2d 1343, 1345, 188 USPQ 659, 661 (CCPA 1976).

Thus, the dispositive issue is whether Appellants' disclosure, considering the level of ordinary skill in the art as of the date of Appellants' application, would have enabled a person of such skill to make and use Appellants' invention without undue experimentation. The threshold step in resolving this issue is to determine whether the Examiner has met his burden of proof by advancing acceptable reasoning consistent with enablement requirement.

The Examiner asserts [answer, pages 3 to 4 and 6 to 8] that "the back surface structure [in Figs... 4 and 5] would recombine all minority carriers, and inject none. The recombination would in turn prevent proper lateral thyristor action. And at the least, applicant has not provided enabling disclosure for such an arrangement ... " [id. 4]. Appellants argue at length [brief, pages 5 to 8 and reply brief, pages 2 to 4] against the Examiner's position. Appellants explain [id. 6 and 7] the mechanics of the flow of the carriers among

the various regions and conclude by asserting [id. 7 and 8] that "all of the above information is common knowledge to persons skilled in the art, as these 'four layer diodes' or Shockley diodes are well known." Appellants further elaborate on their position and state [reply brief, page 2] that "[s]pace-charge depletion layers surround the p-n junctions depicted in Figure 5, These depletion layers are not depicted in Figure 5, but their existence and characteristics are thoroughly understood by those skilled in the art." The Examiner makes a reference [answer, pages 6 to 7] to the July 17, 1996 [sic, 1995] amendment where "Applicant [sic] appreciates [id. 3] the detailed examination by the Examiner, and the pointing out of an apparent error in the drawings for figures 5 and 10. Clearly, the additional n+ region within P regions 88 was simply omitted from the drawing. As was noted by the examiner, ... , these regions are required to provide the back to back switches ..., no new matter is added by these drawing corrections." The Examiner notes [answer, page 7] the omission of any drawing corrections or any explanation for this omission.

We are of the view that Appellants admitted, as the

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Examiner noted above, of an "apparent error" in the drawings of figures 5 and 10 and proposed to make the necessary correction, but did not. However, our opinion does not solely rely on this admission and omission. We further note that Appellants have provided a lengthy response to the Examiner's position but we find a lack of relationship of the explanation to the specification. Instead, Appellants rely on such assertions as [reply brief, page 2] "[t]hese depletions layers ... are thoroughly understood by those skilled in the art", or that [brief, pages 7 to 8] "[a]ll of the above information is common knowledge to persons skilled in the art, as these 'four layer diodes' or Shockley diodes are well known." No independent evidence is presented to show that the alleged information is indeed well known. As has been well established, attorney's arguments in a brief cannot take the place of evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Likewise, mere attorney argument does not take the place of evidence lacking in the record. Meitzner v. Mindick, 549 F.2d 775, 782, 193 USPQ 17, 22 (CCPA 1977), cert. denied, 434 U.S. 854, 195 USPQ 465 (1977).

Therefore, we find that, on balance, the record supports

the Examiner's position and we sustain the rejection of claims 4, 5 and 15 under 35 U.S.C. § 112, first paragraph for lack of enablement.

Regarding the obviousness rejections, we are guided by the general proposition that in an appeal involving a rejection under 35 U.S.C. § 103, an examiner is under a burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). We are further guided by the precedence of our reviewing court that the limitations from the disclosure are not to be imported into the claims. In re Lundberg, 244 F.2d 543, 113 USPQ 530 (CCPA 1957); In re Queener, 796 F.2d 461, 230 USPQ 438 (Fed. Cir. 1986). We also note that the

arguments not made separately for any individual claim or claims are considered waived. See 37 CFR § 1.192 (a) and (c). In re Baxter Travenol Labs., 952 F.2d 388, 391, 21 USPQ 2d 1281, 1285 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobvious distinctions over the prior art."); In re Wiechert, 370 F.2d 927, 936, 152 USPQ 247, 254 (CCPA 1967) ("This court has uniformly followed the sound rule that an issue raised below which is not argued in this court, even if it has been properly brought here by reason of appeal is regarded as abandoned and will not be considered. It is our function as a court to decide disputed issues, not to create them.").

We now treat the rejections before us.

Claims 1, 2, 6, 12 and 16

These claims are rejected under 35 U.S.C. § 103 as being obvious over Ohta. The Examiner contends [answer, pages 4 to 5 and 9 to 10] that Ohta (column 8) shows different size shorts for a two terminal device. The Examiner asserts [id. 4] that "[i]t is considered that such different size shorts would have clearly been obvious in Ohta's 3 terminal device."

Appellants argue [brief, pages 13 to 15] that Ohta shows different size shorts only for a two terminal device. Appellants further argue [id. 13] that "[t]he three terminal embodiment disclosed in Ohta is not shown to have different size shorts in different regions." The Examiner counters [answer, page 9] that "t]he brief's argument is little more than an assertion of bare novelty, which does not address the issue here, one of **obviousness** under 35 U.S.C. § 103. Clearly the teachings by Ohta, with regard to Fig. 2 (discussed at the top of col. 8 of Ohta), would have provided ample motivation to similarly employ different sized holes in three-terminal structures[,] otherwise of similar construction, as in Fig. 5 of Ohta, for similar assymmetric [sic] characteristics."

We are persuaded by the Examiner's reasoning. It is true that Ohta only shows a two terminal device which can have different size shorts, and further shows a three terminal device having only the same size shorts. However, Ohta does disclose the desirability of providing the two terminal device with different size shorts [column 8, lines 1 to 31]. We find that the same desirability of having an asymmetric current flow in different regions in case of a two terminal device

would have made it obvious for an artisan to provide different size shorts in a three terminal device such as shown by Ohta in Fig. 5. Therefore, we sustain the obviousness rejection of claim 1, and hence, claims 2, 6, 12 and 16 over Ohta.

Claims 1 to 3, 6, 12 and 16

These claims are rejected as being obvious over Ohta in view of Alonas.

At the outset, we note that Appellants have not argued this rejection with regard to 1, 2, 6, 12 and 16. Therefore, we sustain the rejection of 1, 2, 6, 12 and 16 over Ohta and Alonas for the same reasons as above over Ohta alone.

With respect to claim 3, the Examiner contends [answer, page 5] that "[i]t would have been obvious to have Ohta's device lateral, as in Alonas, rather than vertical." Appellants argue [brief, page 17] that "Alonas does nothing to teach the existence of a three terminal device with all three terminals on a single surface of the substrate,"

We note that the Examiner is using Alonas only to show [answer, pages 10 to 11] that "it was well-known to form thyristor devices (Ohta, of course being a thyristor, a combination of 4 layer PNP structures) as lateral structures

with all regions and contacts on the same surface (as contrasted to vertical structures, with regions and contacts on both facing surfaces.) The usual reason for forming the devices as lateral, rather than vertical, structures, is to permit them to be integrated, that is, to form plural devices on the same semiconductor, see the discussion of integrated thyristor in col. 1 of Alonas." As far as a three terminal device with different size shorts is concerned, that is already shown above to be obvious over Ohta alone.

We are convinced by the Examiner's arguments. Alonas does show the teachings of forming various thyristors on the same surface in an integrated fashion, and these teachings of Alonas would have made obvious to make Ohta's device on a single surface, as claimed. Therefore, we also sustain the rejection of claim 3 over Ohta and Alonas.

Claims 12 to 14

These claims are rejected as being obvious over Ohta and Schovanec. The Examiner asserts [answer, page 5] that "[o]bviously any thyristor device has to have a suitable package, and it would have been obvious to use for Ohta a

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conventional package with a heat sink and encapsulant and leads extending therefrom, as illustrated by Schovanec for thyristor devices." Appellants have not argued these claims separately, having elected to group them with claim 1 above. Therefore, we sustain the obviousness rejection of claims 12 to 14 over Ohta and Schovanec.

In summary, we have sustained the rejections of claims 1 to 6 and 12 to 16. Accordingly, we affirm.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

	JAMES D. THOMAS)	
	Administrative Patent Judge)	
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	KENNETH W. HAIRSTON)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
	PARSHOTAM S. LALL)	

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